John Hunter Hospital
Physiotherapy Primary Contact
Fast Track Extended Hours Service

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## Acknowledgements

### ED Medical & Nursing staff

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### Other Acknowledgements

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Hunter New England Local Health District:
- Provides services to around 850,000 people
- Employs 15,500 staff
- Spans 25 local council areas
- Represents 20% of NSW land mass

HNELHD is the only district in NSW with:
- A major metropolitan centre
- A mix of several large regional centres
- Many smaller rural centres and remote communities within its borders.
JHH ED - Rural Service

• JHH ED Manages a large number of rural presentations:
  – Referred from rural & regional hospitals
    • incl Orthopaedics, trauma & acute esp after hours
    • Liaison, handovers to and from rural sites
    • Discharges to rural sites
  – Patients who drive for service esp after hours or on weekends:
  – 25% presentations to JHH ED are outside metropolitan Newcastle
The NSW Premier, Ministry of Health and HNELHD identify increasing Emergency Department (ED) presentations, and Emergency Treatment Performance (ETP) targets as state-wide priorities.

- ETP targets are under pressure from increasing musculoskeletal presentations to ED.
- MS cases 20% of presentations to ED.

ED Primary Contact Physiotherapist’s have been added to a number of ED’s to manage musculoskeletal presentations.

Research demonstrates that Primary Contact Physiotherapist’s:

- Reduce ED waiting & treatment times safely without adverse events,
- Improve musculoskeletal treatment outcomes, &
- Overall ED performance. \(^{(1,2,3)}\)

Emergency Treatment Performance: Patients with Total time in ED <= 4hrs. 81% target
Situation - Service & Clinical Dilemma
Situation

John Hunter Hospital (JHH) is:
• Tertiary referral trauma centre for Hunter New England Local Health District and Northern NSW.

JHH Emergency Department (ED) is:
• The busiest ED in NSW, with approx 76,000 presentations per year (41 000 adults).

JHH ED:
• Experiencing a growing number of musculoskeletal presentations affecting patient LOS and ETP performance
  – Musculoskeletal complaints typically triaged category 4 (semi urgent) or category 5 (non-urgent).
• These presentations are seen after serious emergency presentations, prolonging their treatment & affecting ETP.
• In Sept 2015, a Physiotherapy Primary Contact After Hours Fast Track ED Service was introduced to assist JHH manage ETP.
The Physiotherapy After Hours ED
Primary Contact Service:

- Commenced September 2015
- Operates 4.30pm to 8.30pm
- Saturday to Tuesday.
- Days and times were based on analysis of peak presentations to ED of musculoskeletal complaints amenable to physiotherapist management.
- Ie is Targeted to maximise patient and service outcomes
## Workforce

Processes to ensure a sustainable workforce:

A large number of Physiotherapists were developed to fill the after-hours shifts.
- More sustainable & cost effective than relying on one clinician employed for the role.
- Combined with the Governance and competency assessment implemented, a larger number of more junior therapists were able to be sourced.
- More clinicians are able to be trained as required/ turnover

A comprehensive training and assessment “Toolkit” was developed to train a number of Physiotherapists as ED PCP’s to fill the roster.

## Clinical Governance

Processes implemented to ensure safe quality care:

- Collaborative model of care incorporating liaison with medical officers
- Multidisciplinary care- appropriate skills available
- Physiotherapist with relevant experience
- Training
- Competency assessment
- Credentialing
- Supervision
- Peer review via monthly case reviews
- Train the trainer model: Competency assessment for trainers to train
- Collection, evaluation of data

## Clinical Skill

Processes implemented to ensure clinical skill- Training & competency Ax:

- Est of theory and practical training program
- Practical assessment against 32 advanced practice Physiotherapy ED specific competencies
- X-ray interpretation of clinicians assessed prior to commencing primary contact role
- Train the trainer assessment program to credential senior Physiotherapists to train & assess staff competency
Clinical Model
Physiotherapy in ED

“Secondary Contact Model”

Nursing Triage → Medical / Nursing Assessment → Referral to Physiotherapist

Expanded scope “Primary Contact” Role

Initial Nursing Triage → Direct referral to ED Primary Contact Physiotherapist Triage Cat 4/5 inclusion & exclusion criteria → Physiotherapist and Medical Officer Collaboration
## Collaborative vs Autonomous Model

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<tr>
<th>Primary Contact Physiotherapy Collaborative Care</th>
<th>Primary Contact Autonomous Care</th>
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<td>• Patients referred to Physiotherapist directly from triage.</td>
<td>• Patients referred to Physiotherapist directly from triage.</td>
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<td>• Analgesia and imaging arranged by triage prior to Physiotherapist assessment.</td>
<td>• Analgesia and imaging arranged by Physiotherapist.</td>
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<td>• Consultation between Physiotherapist and Medical Officers on investigation findings, diagnosis, treatment and follow-up care.</td>
<td>• Patient care with autonomously delivered by Physiotherapist. Diagnosis, treatment and follow-up care determined by Physiotherapist</td>
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<tr>
<td>• Imaging collaboratively reviewed by Physiotherapist and Medical officer</td>
<td>• Imaging independently reviewed by Physiotherapist</td>
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<tr>
<td>• Direct medical officer review not required</td>
<td>• Medical officer consultation not required.</td>
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<td>• The Physiotherapist documents medical consultation outcomes as well as recommendations. Physiotherapist performs treatment and arranges follow up care.</td>
<td>• The Physiotherapist responsible for document of diagnosis, treatment and follow up care independently.</td>
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### Inclusion Criteria
- Isolated soft tissue injuries such as joint, ligament, tendon or muscle pain
- Simple, closed single limb (upper or lower) injuries without gross deformity or neurovascular compromise (incl simple fractures)
- Spontaneously reduced peripheral joint dislocation without evidence of fracture
- Cast aftercare and checks

### Exclusion Criteria
- Gross deformity or neurovascular compromise or open fractures
- Co-existing acute medical conditions or head/thorax/abdominal/spinal injuries
- Nail bed injuries
- Significant lacerations or abrasions
- Foreign bodies
- High speed mechanism of injuries especially patients meeting trauma call criteria
- Peripheral dislocation not reduced
- Paediatric patients (<16 years old)
- Lower back, thoracic or cervical pain

Musculoskeletal triage level 4/5 conditions
Aims

• Primary research questions:
  • Does primary contact physiotherapy improve the number of patients meeting ETP?
  • Does an ED physiotherapy service positively impact ED?

• Secondary research questions:
  • What differences are present in discharge destination between contact type?
  • Are differences present in orthopaedic referral and analgesia prescription in ED?
  • What is the cost consequence of the service?
Methods

• **Prospective data collection**
  - Data collected on all patients managed under after hours model of care
  - Data collated by treating Physiotherapist
  - Entered into secure database
  - An Ethics waiver was secured for data collection

• **Cost Consequence Study**
  - A pre (Usual Care) and post (Intervention) design was used to compare outcomes
  - The same monthly period (September to November), arriving in the same times (3.30 pm to 8.30 pm) in 2014 (Usual Care) against the same periods aggregated for 2015 and 2016 (Intervention).

• **Data collected on:**
  - ED waiting and treatment times
  - Triage category
  - Diagnosis
  - Radiology orders
  - 28 day representations
  - Follow up plans
  - Missed diagnoses

• **Statistical analysis**
  - Summary statistics developed based on Physiotherapy contact type primary Vs secondary contact
  - Between group comparisons/differences in proportions for orthopaedic referrals, fracture clinic referrals, discharge destination and analgesia prescription were completed by chi square analysis with significance levels set at 0.05.
Results

**ETP:**
- ETP Primary contact: 90%
- ETP non primary contact: 56%

**Time to Assessment:**
- Mean time from referral to assessment: 2.4 minutes

**LOS:**
- Mean LOS primary contact (SD):
  - 120min (66min)
- Mean LOS non primary contact:
  - 209 min (112min)

**Referral Source:**
- Primary contact referrals are mainly sourced directly from the waiting room (CAP).
- The majority of referrals for non primary contact are received from ED medical or Orthopaedic staff.

**Orthopaedic referrals & analgesia prescription:**
- A significant reduction in the rate of Orthopaedic referrals for patients when managed by a Primary contact Physiotherapist (46.05% vs 63.02%)
- A significant reduction in analgesia prescription on discharge when managed by a Primary contact Physiotherapist (18.84% vs 32.54%)

**Primary contact Physiotherapy Service discharge destination:**
- 16% reduction in fracture clinic referrals (P<0.01)
- 12% increase in GP referrals (P<0.01)
Primary vs Secondary contact difference in LOS by diagnosis type eg:

- 118 minute reduction for thumb fractures
- 85 minute reduction for shoulder sprains
- 84 minute reduction for scaphoid fractures
- 73 minute reduction for distal fibula fractures

Cost Consequence:
The net cost was $10,155 per quarter (95% CI: $9,932 to $11,201) for

The intervention saved an average of 42.8 minutes in ED LOS (95% CI: 8.3 to 77.6 minutes), compared to Usual Care

A statistically significant saving at the .05 level ($p = 0.03$).

Patient Satisfaction:
97% patients describe their care as good to excellent
Discussion

- Introduction of an after hours Primary contact Physiotherapy service has:
  - Provided a safe effective service without adverse events
  - Increased the number of musculoskeletal patients meeting ETP targets during peak times
  - Reduced the length of stay for musculoskeletal patients in ED
  - Reduced the number of Orthopaedic referrals and increased the number of discharges to GP’s instead of fracture clinics
  - Reduced the amount of analgesia prescription on discharge.

- **This has occurred without any representations or adverse events identified by the research team**

- Results likely to be due to:
  - Faster access to commence treatment (seen out of order compared to awaiting medical review)
  - Physiotherapy contribution to musculoskeletal assessments
  - Physiotherapists likely to trial/recommend other forms of analgesia, rest, ice, compression over prescription medication
Cost Consequence Study:

• The intervention is effective in terms of reducing average LOS.

• The model employed did not result in full cost recovery.

However:

• This model did not take into account the cost saving of a 16% reduction in referrals to fracture clinic from this patient co-hort.

• Analysis to date indicates a significant reduction in the amount of analgesia prescribed for patients seen by a Physiotherapist.
Rural Settings:
Either or all of the models implemented may be transferrable to a rural setting:

- Clinical model - Primary contact collaborative care (where a MO is available)
- Governance - Collaborative care model
- Training program (competencies, train the trainer program) -
  - Inreach training to a regional centre
- Workforce
  - Training of a number of staff to fill rosters sustainably (Regional centre)
  - Training novice staff in competencies for service delivery

Eg:
Regional Centre – The Maitland Hospital
District Hospital – Belmont District Hospital
Future directions

• Rollout of collaborative, workforce and training models to other services
  – Successful rollout to date for eg
    • Physiotherapy Parallel Clinics with Neurosurgeons (for LBP),
    • Physiotherapy assistance for Orthopaedic Shoulder Clinics at BDH

• Exploring opportunities for scalability and replicability eg:
  A multi-site trial to evaluate replicability & scalability of the collaborative model to the rural & regional NSW health system for:
  – Training & governance “toolkit”
  – Collaborative Model
References


